5th, A trough to convey the water from the upper canal to the tub.

6th, A drum wheel, over the pit, to which the tub is ſuſpended; which wheel gives motion to the remainder of the apparatus; with a ſmall fan to regulate the increaſed velocity of the tub, in riſing from the bottom to the top of the pit.

7th, A weight ſuſpended to the oppoſite ſide of the drum; which muſt be ſomething ſuperior to the empty tub.

8th, Balance chains, which are equal in length to the depth of the pit; theſe muſt be faſtened, one end to the bottom of the tub, the other to the bottom of the weight.

9th, A horizontal wheel at the bottom of the plane, and over the lower canal; alſo, a wheel inclined on the ſame angle as the plane, to be placed at the top; round theſe two wheels the leading chains are continued, and perform a rotatory movement.

10th, A lying ſhaft with two wheels multiplied movement, to convey the motion from the drum to the inclined wheel.

11th, A ſmall wheel receiving motion from the back of the inclined wheel; in order to draw the boat out of the upper canal on the bridge of the plane.

12th, A ſtopper on the plane near the bridge, to prevent the boat deſcending till the man is ready.

13th, A pair of centrifugal fans to regulate the movement.

14th, A lying ſhaft, multiplied movement, to communicate the motion with the fans and inclined wheel.

15th, Building to cover and ſupport the works, with ſome levers and valves, to be deſcribed.

To erect ſuch a machine; the firſt conſideration is, in ſurveying the propoſed line of the canal, to run it to ſuch points of hills as will admit of the greateſt poſſible riſe at one time; as this will prevent much machinery and reduce the number of operations.

The ſlope of the hill muſt then be formed into a regular plane of any angle under forty-five degrees, to which the ground is beſt adapted; and extending from one pond to the other, as in Fig. II. Two planes muſt then be formed, in width two feet one inch, and each diſtant from the other ſix feet; the ground work of theſe planes may be timber, framed together and laid on a bed of rubble, or rough aſhlar, or the aſhlar covered with coping ſtones, each of which ſhould be at leaſt three feet long croſſing the plane, and not leſs than one foot diameter, neatly dreſſed and jointed; this mode would form a permanant plane of ſtone, the two ſhould be united by wood binders at about every fifteen feet, or caſt iron rails would be much better in conſequence of their duration. Having formed the plane by either of theſe modes, the iron rails caſt with a flange, and ſix or more feet long, muſt be carefully placed two feet one inch apart from flange to flange; if laid on wood, ſtrong ſpikes will be ſufficient ſecurity, and if laid on ſtone they ſhould be carefully bedded, and the ſpikes or pins faſtened by melted lead, obſerving to fill every aperture to prevent the admiſſion of water, which freezing in winter might ſplit the ſtone; ſuch a plane of iron and ſtone is moſt adviſeable as it is moſt laſting.